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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/734,245

12/15/2003

Toshihisa Nihei

117404

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7590

04/19/2006

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EXAMINER

SCHWARTZ, CHRISTOPHER P

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,245

Applicant(s)

NIHEI ET AL.

Examiner

Christopher P. Schwartz

Art Unit

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-12 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-12 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

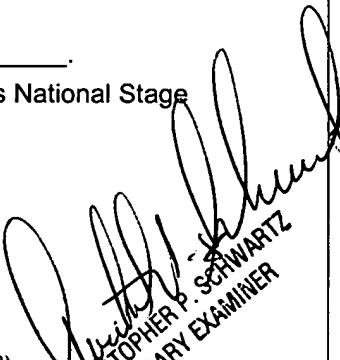
- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.


CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 8, 2006 has been entered.

Specification

2. The disclosure is objected to because of the following informalities: Page 10 applicants should better explain the newly added limitation to claim 1 (previously in claim 10) "a value of time quadrature of a fluid pressure...." Since it has been explained (on page 10) as simply "fluid pressure". See for instance line 26..

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1,2,5-12,15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano '105 in view of Hirao et al. '909 and Tanaka et al. '397.

Regarding claims 1,2,5-12,15-19 Sano discloses a brake apparatus that uses target and actual wheel slip rates and target and actual yaw rates to control the braking stability of the vehicle. Please see cols. 1 and 2 and cols. 15-19. Note the target slip rate correction process discussed in col. 2 and the yaw rate deviation calculation methods discussed in cols. 13+.

Sano lacks a specific discussion of making a first correction to the target slip rate such the actual yaw rate of the vehicle matches a target yaw rate.

However, as discussed in col. 1 Sano discloses a known technique in the prior art. Specifically "a first computing means for computing a first target braking force for controlling the actual kinetic value of the vehicle to match the target kinetic value and a second computing means for computing a second target braking force... to establish a predetermined slip to the wheels..." This portion of the patent goes on to say that upon cornering of the vehicle the braking forces are controlled such that the actual yaw rate matches a target yaw rate.

Lacking in the prior art devices up to this point, Sano states, was a way to control the yaw moment of the vehicle when it is also in anti-skid control.

Sano states at the bottom of col. 1 and over to col. 2 that a correction means for increasing the target slip ratio is provided "in accordance with yaw moment control of the vehicle".

The reference to Hirao et al. is also relied upon to provide a teaching of this known concept as discussed in cols 1-5, but particularly col. 4. As discussed in col. 4 lines 5-25 Hirao et al. calculates actual and reference yaw rates for the vehicle and includes a correction means for correcting a target slip rate based upon the difference in target and actual yaw rates and also teaches a correction limiting means which prevents the aforesaid correction when the turn angle of the steering wheel is smaller than a predetermined value.

At pages 6 and 7 of their remarks applicant's seem to acknowledge that these facts are taught by the references above.

However, contrary to applicant's remarks, both references are related, in the broad sense, to vehicle stability control and therefore brake control.. Sano discusses ABS control in combination with the turning or yaw control of the vehicle and Hirao discloses literally the same thing. See col. 3 and 4 of Hirao. Note also the traction control system discussed on line 51 of col. 4. All of this can be said to be directed to braking control.

Both references lack a specific discussion of adjusting the fluid pressures in the wheel brakes to that the target values of slip and yaw match the actual values.

Nevertheless some amount of fluid pressure control is inherent to both references.

The reference to Tanaka et al. is relied upon to provide a better explanation of this idea in column 11 during understeer control of the vehicle. Note this occurs when it is detected that the target and actual yaw rates have moved away from one another.

It would have been obvious to have incorporated the teachings of Hirao et al. and Tanaka et al. into Sano '105 simply as one well known alternative method of using target and actual slip/yaw rates to provide stability control through the adjustment, or correction and prevention thereof, of the braking forces (i.e. longitudinal forces) applied to the individual wheels to compensate for sudden changes in road surface conditions, encountered thereby, when the vehicle is in, or goes into, ABS/Stability control mode.

Although, as applicant's correctly point out, the correction prevention means to the target slip rate of Hirao is based upon the amount of steering angle, it would appear to some extent that applicant's is also, as stated on page 6 of their remarks.

Response to Arguments

6. Applicant's arguments filed February 8, 2006 have been fully considered but they are moot in view of the new grounds of rejection.

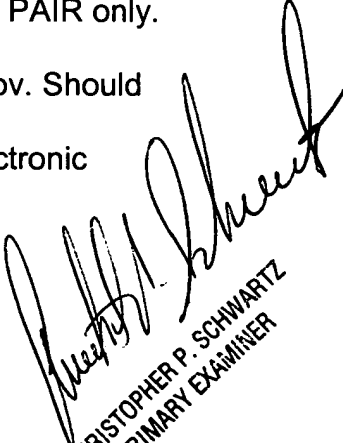
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 571-272-7123. The examiner can normally be reached on M-F 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim McClellan can be reached on 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cps
4/15/06



CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER